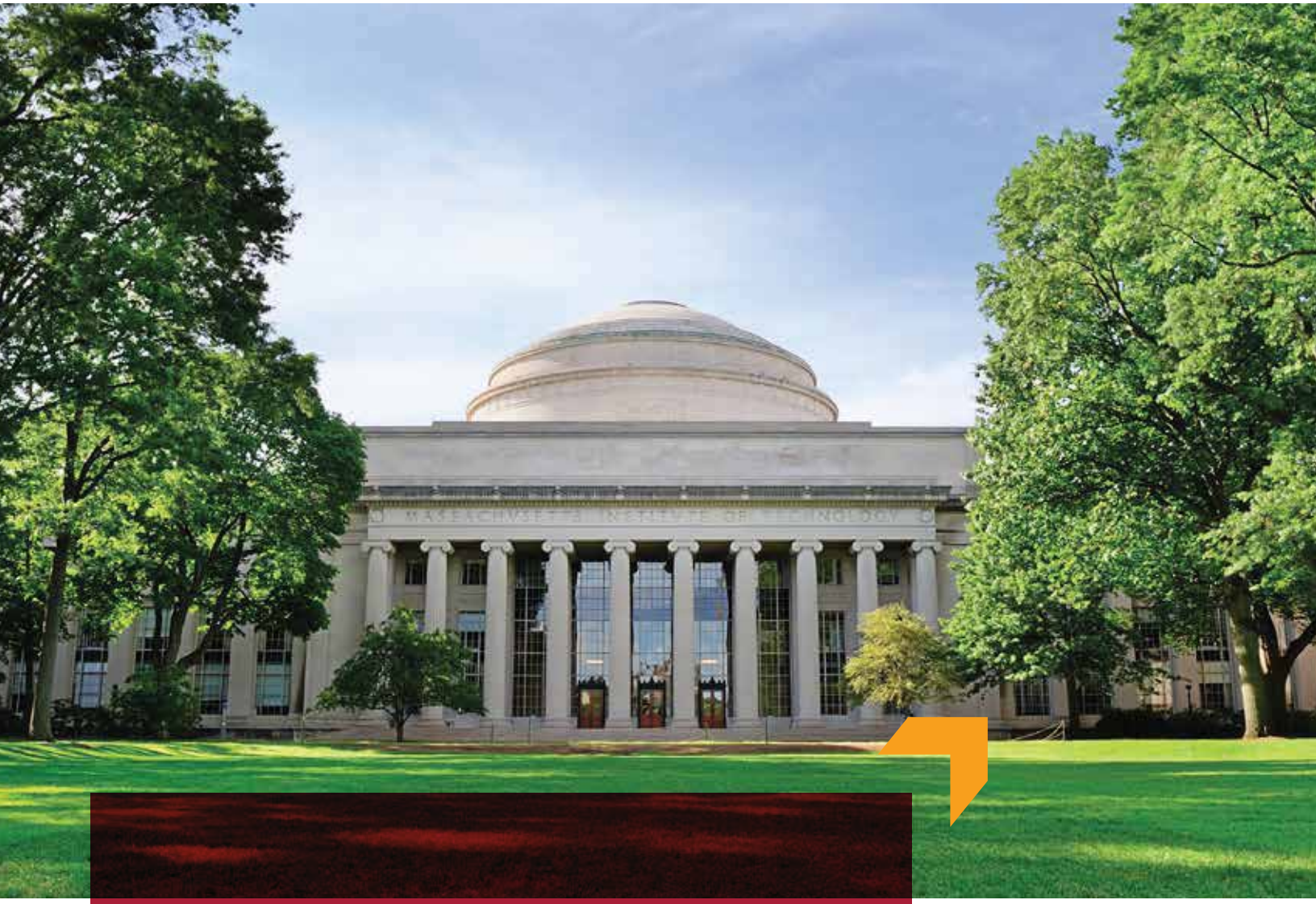
PROFESSIONAL EDUCATION



APPLIED DATA SCIENCE PROGRAM

LEARN HOW TO BECOME A DATA-DRIVEN DECISION MAKER WITH THE 12-WEEK LIVE VIRTUAL PROGRAM DELIVERED BY MIT FACULTY

ABOUT MIT PROFESSIONAL EDUCATION

A leader in engineering and technology education for 70 years, MIT Professional Education provides world-class learning opportunities for professionals who are looking to advance their careers, creatively address complex problems, and build a better future.

Our blend of traditional classroom instruction with leading online technology enables better learning outcomes, while promoting engagement and collaboration.

MISSION

MIT Professional Education provides a gateway to renowned MIT research, knowledge and expertise for working professionals engaged in science and technology worldwide, through advanced education programs designed for them.

Central to MIT's vision, MIT Professional Education fulfills the mandate to connect practitioner-oriented education with industry, and to incorporate industry feedback and knowledge into MIT education and research.

ABOUT THE PROGRAM

Data is getting created at a rapid pace. It is estimated that more than 2 quintillion bytes of data have been created each day in the last two years. As organizations experience an overflow of data, they are sparing no effort to extract meaningful insights to make smarter business decisions. In order to help you unravel the true worth of data, MIT Professional Education offers Applied Data Science Program, which aims to prepare data-driven decision makers for the future.

In this program that lasts for 12 weeks, you will be able to upgrade your data analytics skills by learning the theory and practical application of supervised and unsupervised learning, time-series analysis, neural networks, recommendation engines, regression, and computer vision, to name a few.

Upon successful fulfillment of requirements, you will receive a Certificate of Completion from MIT Professional Education at the end of the program.

PROGRAM BENEFITS

- Learn from award-winning MIT faculty via live virtual sessions from the convenience of your home.
- Fuel your career transition with 1-on-1 career sessions, resume and LinkedIn review, and an e-portfolio with 6 hands-on projects and a 3 week capstone project.
- Receive a Certificate of Completion from MIT Professional Education.
- Benefit from live mentorship from industry experts on the applications of concepts taught by faculty.
- Earn 3.0 Continuing Education Units (CEUs) on successful completion of the program.

PROGRAM STRUCTURE

This is a 12-week program

- **2 weeks** Foundational courses on Python and Statistical Science.
- **6 weeks** Core curriculum including practical applications. Involves 58 hours of live virtual sessions by MIT faculty and industry experts, with hands-on practical applications and problem solving.
- **1 week** Project submissions.
- **3 weeks** Final, integrative capstone project.

WHO IS THIS PROGRAM FOR?

- Professionals who are interested in a career in Data Science and Machine Learning.
- Professionals interested in leading Data Science and Machine Learning initiatives at their companies.
- Entrepreneurs interested in innovation using Data Science and Machine Learning.

AFTER THIS COURSE YOU WILL BE ABLE TO

- Understand the intricacies of Data Science techniques and their applications to real-world problems.
- Implement various Machine Learning techniques to solve complex problems and make data-driven business decisions.
- Explore the realms of Machine Learning, Deep Learning and Neural Networks, and how they can be applied to areas such as Computer Vision.
- Develop strong foundations in Python, Mathematics, and Statistics for Data Science.
- Understand the theory behind recommendation systems and explore their applications to multiple industries and business contexts.
- Build an industry-ready portfolio of projects to demonstrate your ability to extract business insights from data.

PROGRAM CURRICULUM

The program is 12 weeks long:

2 weeks for foundations
6 weeks of core curriculum, including practical applications
1 week for project submissions
3 weeks for a final, integrative capstone project

Module 1 — Week 1 & 2

Foundations for Data Science

- Python Foundations - Libraries: Pandas, NumPy, Arrays and Matrix handling, Visualization, Exploratory Data Analysis (EDA)
- Statistics Foundations: Basic/Descriptive Statistics, Distributions (Binomial, Poisson, etc.), Bayes, Inferential Statistics

Module 2 — Week 3

Data Analysis & Visualization

- Exploratory Data Analysis, Visualization (PCA, MDS and t-SNE) for visualization and batch correction
- Introduction to Unsupervised Learning: Clustering includes - Hierarchical, K-Means, DBSCAN, Gaussian Mixture
- Networks: Examples (data as network versus network to represent dependence among variables), determine important nodes and edges in a network, clustering in a network

Module 3 — Week 4

Machine Learning

- Introduction to Supervised Learning -Regression
- Model Evaluation- Cross Validation and Bootstrapping
- Introduction to Supervised Learning- Classification

Learning Break — Week 5

Module 4 — Week 6

Practical Data Science

- Decision Trees
- Random Forest
- Time Series (Introduction)

Module 5 — Week 7

Deep Learning

- Intro to Neural Networks
- Convolutional Neural Networks
- Graph Neural Networks

Module 6 — Week 8

Recommendation Systems

- Intro to Recommendation Systems
- Matrix
- Tensor, NN for Recommendation Systems

Learning Break — Week 9

- Time for participants to finish and submit their projects

Module 7 — Week 10-12

Capstone Project

- Week 10: Milestone 1
- Week 11: Milestone 2
- Week 12: Synthesis + Presentation

PROGRAM FACULTY

Devavrat Shah

Director, Statistics and Data Science Center (SDSC) at MIT
Professor, Electrical Engineering & Computer Science (EECS) at MIT, PhD (Stanford University)

Munther Dahleh

Director, MIT Institute for Data, Systems and Society (IDSS)
William A. Coolidge Professor, Electrical Engineering & Computer Science (EECS) at MIT, PhD (Rice University)

Caroline Uhler

Henry L. & Grace Doherty Associate Professor, Institute for Data, Systems and Society (IDSS) and Dept. of Electrical Engineering & Computer Science (EECS) at MIT, PhD (UC Berkeley)

John N. Tsitsiklis

Clarence J Lebel Professor, Dept. of Electrical Engineering & Computer Science (EECS) at MIT, Professor, Laboratory for Information and Decision Systems (LIDS) at MIT, PhD (MIT)

Stefanie Jegelka

X-Consortium Career Development Associate Professor, Electrical Engineering & Computer Science (EFCS) at MIT, Member, Computer Science & Artificial Intelligence Labo

Program faculty are subject to change.

PROGRAM MENTORS

The program coaches you to work on hands-on industry relevant projects by Data Science and Machine Learning experts via live and personalized mentored learning sessions to give you a practical understanding of core concepts.

Roman Mozil
Applied Data Scientist, Finning (Canada)

Kalle Bylin
Product Engineer, Modyo (Colombia)

Subhodeep Dey
Data Scientist, UnitedHealth Group (India)

Bradford Tuckfield
Senior Manager - Data Science, Charles Schwab (US)

Andrew Marlatt
Senior Data Scientist, BigBear.ai Holdings (US)

Animesh Gupta
Data Scientist, WestJet Airlines (Canada)

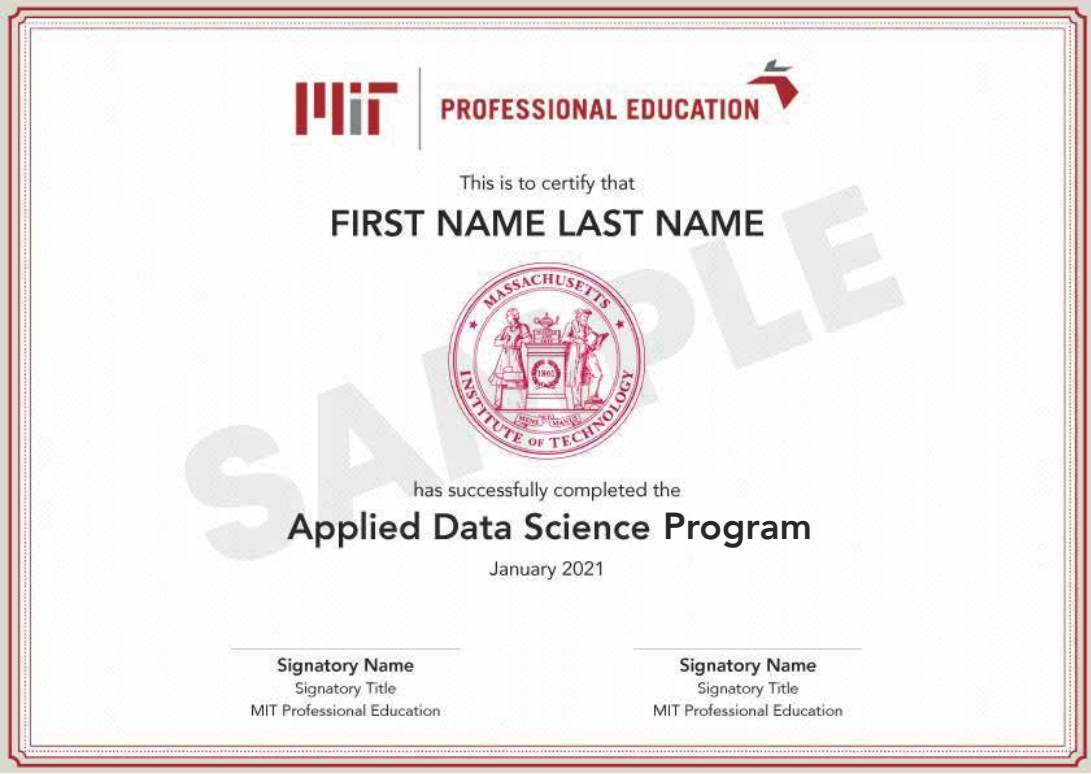
Marco De Virgilis
Senior Actuarial Data Scientist, Allstate (US)

Matt Nickens
Manager- Data Science, The Walt Disney Studios (US)

PROGRAM MANAGER YOUR PERSONAL GUIDE

Your dedicated Program Manager, provided by Great Learning, will be your single point of contact for all academic and non-academic queries in the program. They will keep track of your learning journey, give you personalized feedback, and the required nudges to ensure your success.

CERTIFICATE OF COMPLETION



The image is for illustrative purposes only. The actual certificate may be subject to change at the discretion of MIT Professional Education.

APPLICATION PROCESS

STEP-1

Application Form
Register by completing the online application form.

STEP-2

Application Screening
Your application will be reviewed to determine if it is a fit with the program.

STEP-3

Join the Program
If selected, you will receive an offer for the upcoming cohort. Secure your seat by paying the fee.

APPLICATION & FEE DETAILS

Program Duration: **12 weeks**

Fees: **USD3400** | Start Date: **March 19, 2022**

Prerequisites: **Basic knowledge of Computer Programming and Statistics**

MIT Professional Education's Applied Data Science Program, with curriculum developed and taught by MIT faculty, is delivered in collaboration with Great Learning.

Great Learning

POWER AHEAD

Great Learning is one of India's leading professional learning platforms focused on upskilling working professionals and students. It offers comprehensive, industry-relevant programs in Software Engineering, Business Management, Business Analytics, Data Science, Machine Learning, Artificial Intelligence, Cloud Computing, Cyber Security, Digital Marketing, Design Thinking, and more. Great Learning's programs are developed in collaboration with the world's foremost academic institutions like Stanford University, The University of Texas at Austin, Northwestern University, Indian Institute of Technology, Madras (IIT Madras), People's Education Society University, Bengaluru (PES University, Bengaluru) and Great Lakes Institute of Management and are constantly reimagined and revamped to address the dynamic needs of the industry. Great Learning is the only ed-tech company to provide these programs in a blended mode, classroom mode and in purely online mode, relying on its vast network of expert mentors and highly qualified faculty to deliver an unmatched learning experience for learners in India and the world. Having delivered transformational learning that has impacted 3.3 million+ learners from over 160+ countries, Great Learning is on a mission to enable transformative learning and career success in the digital economy for professionals and students across the globe.

READY TO BECOME A DATA-DRIVEN DECISION MAKER?

APPLY NOW

Contact Great Learning for more information about MIT Professional Education's Advanced Data Science Program

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http://www.mygreatlearning.com/mit-data-science-program